Performance - 2.5

Antonio Crispino - 40109690

Maira Malhi - 40128269

Nabila Mehreen - 40130897

-----STOP WORDS REMOVED-----

Emotion Score: 0.3925619834710744

Emotion Classfication Report:

precision recall f1-score support

admiration 0.49 0.44 0.46 2141 amusement 0.53 0.35 0.42 1178 0.35 0.13 0.19 1060 anger annoyance 0.18 0.07 0.10 1584 approval 0.25 0.09 0.13 2240 721 caring 0.28 0.04 0.07 confusion 999 0.32 0.06 0.11 curiosity 0.39 0.09 0.15 1188 0.05 desire 0.37 0.09 389 disappointment 0.30 0.05 0.09 965 disapproval 0.25 0.07 0.11 1558 0.38 0.08 0.13 582 disgust embarrassment 0.48 0.03 0.06 316 excitement 0.24 0.04 0.07 586 0.40 fear 0.07 0.12 348 0.75 0.70 0.72 gratitude 1360 grief 0.00 0.00 0.00 78 joy 0.41 0.14 0.21 897 0.61 0.38 0.47 1014 love 0.50 0.01 0.01 156 nervousness 0.37 0.84 0.52 11161 neutral 0.25 894 optimism 0.45 0.17 pride 0.33 0.01 0.02 128 realization 0.22 0.04 0.06 964 relief 0.00 0.00 0.00 162 remorse 0.47 0.09 0.15 303 sadness 0.38 0.10 0.16 727 surprise 0.34 0.11 0.16 665

accuracy 0.39 34364 macro avg 0.36 0.15 0.18 34364 weighted avg 0.38 0.39 0.32 34364

Sentiment Score: 0.5360551740193226

Sentiment Classification Report precision recall f1-score support

ambiguous 0.41 0.20 0.27 3816 0.53 negative 0.51 0.52 7677 neutral 0.48 0.49 0.48 11161 positive 0.60 0.71 0.65 11710

accuracy 0.54 34364 macro avg 0.51 0.48 0.48 34364 weighted avg 0.53 0.54 0.52 34364

Emotion Score: 0.3611046443952974

Emotion Classfication Report:

precision recall f1-score support

0.56 0.47 2141 admiration 0.41 0.39 0.55 0.46 1178 amusement 0.30 anger 0.25 0.37 1060 annoyance 0.14 0.22 0.18 1584 approval 0.19 0.25 0.22 2240 721 caring 0.22 0.27 0.24 confusion 0.23 0.28 0.25 999 curiosity 0.33 0.33 0.33 1188 desire 0.23 0.32 0.27 389 disappointment 0.17 0.18 0.17 965 0.26 0.24 0.25 disapproval 1558 disgust 0.24 0.17 0.20 582 embarrassment 0.24 0.18 0.21 316 excitement 0.17 0.15 0.16 586 fear 0.38 0.37 0.38 348 0.73 0.72 0.73 gratitude 1360 0.09 0.09 grief 0.10 78 0.28 0.24 0.26 897 joy 0.55 love 0.52 0.54 1014 0.18 0.13 0.15 nervousness 156 neutral 0.50 0.44 0.47 11161 optimism 0.36 0.20 0.26 894 pride 0.17 0.09 0.12 128 realization 0.19 0.08 0.11 964 relief 0.24 0.07 0.11 162

0.29

0.34

303

0.40

remorse

```
sadness 0.34 0.20 0.25 727
surprise 0.37 0.20 0.26 665
```

accuracy 0.36 34364 macro avg 0.30 0.28 0.28 34364 weighted avg 0.37 0.36 0.36 34364

Sentiment Score: 0.5390815970201374

Sentiment Classification Report precision recall f1-score support

ambiguous 0.35 0.46 0.40 3816 negative 0.51 0.59 0.54 7677 neutral 0.51 0.48 0.49 11161 0.70 positive 0.59 0.64 11710

accuracy 0.54 34364 macro avg 0.52 0.53 0.52 34364 weighted avg 0.55 0.54 0.54 34364

Emotion Score: 0.42084739844022817

Emotion Classfication Report:

precision recall f1-score support

0.49 admiration 0.47 0.48 2141 0.59 0.50 0.54 1178 amusement 0.20 0.38 0.14 1060 anger 0.20 0.02 0.03 1584 annoyance approval 0.52 0.04 0.08 2240 0.00 0.00 0.00 721 caring confusion 0.50 0.00 0.00 999 curiosity 0.91 0.02 0.03 1188 desire 0.29 0.01 0.01 389 disappointment 1.00 0.00 0.00 965 disapproval 0.08 0.00 0.00 1558 0.50 0.02 0.04 582 disgust embarrassment 1.00 0.00 0.00 316 0.40 0.00 0.01 586 excitement fear 0.00 0.00 0.00 348 0.78 gratitude 0.80 0.76 1360 grief 1.00 0.00 0.00 78 0.38 0.15 0.21 897 joy 0.56 0.63 0.59 love 1014 nervousness 1.00 0.00 0.00 156 0.39 0.91 0.54 neutral 11161

0.32 894 optimism 0.52 0.23 pride 1.00 0.00 0.00 128 realization 1.00 0.00 0.00 964 relief 1.00 0.00 0.00 162 0.51 0.47 303 remorse 0.44 0.54 0.13 0.21 727 sadness surprise 0.44 0.05 0.08 665

accuracy 0.42 34364 macro avg 0.57 0.17 0.17 34364 weighted avg 0.47 0.42 0.31 34364

Sentiment Score: 0.5579385403329066

Sentiment Classification Report precision recall f1-score support

ambiguous 0.51 0.14 0.22 3816 negative 0.58 0.44 0.50 7677 neutral 0.47 0.69 0.55 11161 positive 0.69 0.65 0.67 11710

accuracy 0.56 34364 macro avg 0.56 0.48 0.49 34364 weighted avg 0.57 0.56 0.54 34364

Best Emotion Score: 0.38287887008857885

Best Emotion Estimator: MultinomialNB(alpha=0.5)

Emotion Classfication Report:

precision recall f1-score support

admiration 0.47 0.50 0.48 2141 amusement 0.49 0.46 0.47 1178 0.33 0.20 0.25 1060 anger 0.18 0.10 0.13 1584 annoyance 0.12 0.15 2240 approval 0.23 caring 0.23 0.10 0.14 721 confusion 0.29 0.11 0.16 999 curiosity 0.38 0.14 0.21 1188 desire 0.32 0.11 0.17 389 disappointment 0.25 0.08 0.12 965 disapproval 0.22 0.11 0.15 1558 0.31 0.12 0.17 disgust 582 embarrassment 0.38 0.06 0.10 316 excitement 0.21 0.07 0.11 586

fear 0.41 0.18 0.25 348 gratitude 0.71 0.75 0.73 1360 grief 0.00 0.00 0.00 78 0.39 0.22 0.28 897 joy 0.57 0.49 0.53 1014 love 0.23 0.02 0.04 156 nervousness neutral 0.40 0.74 0.52 11161 optimism 0.41 0.26 0.32 894 pride 0.01 0.01 0.07 128 0.09 realization 0.17 0.06 964 relief 0.25 0.01 0.01 162 remorse 0.39 0.17 0.23 303 sadness 0.34 0.19 0.24 727 0.28 665 surprise 0.15 0.19 accuracy 0.40 34364 macro avg 0.32 0.20 0.22 34364

0.35 weighted avg 0.36 0.40 34364

Best Sentiment Score: 0.5324612767069733

Best Sentiment Estimator: MultinomialNB(alpha=1)

Sentiment Classification Report precision recall f1-score support

ambiguous 0.41 0.20 0.27 3816 negative 0.53 0.51 0.52 7677 neutral 0.48 0.49 0.48 11161 positive 0.60 0.71 0.65 11710

0.54 34364 accuracy macro avg 0.51 0.48 0.48 34364 0.53 0.54 0.52 34364 weighted avg

Best Emotion Score: 0.41945058029202614

Best Emotion Estimator: DecisionTreeClassifier(max_depth=100, min_samples_split=30)

Emotion Classification Report:

precision recall f1-score support

admiration 0.45 0.45 2141 0.44 0.49 0.55 0.52 1178 amusement 0.19 0.24 anger 0.33 1060 annoyance 0.16 0.05 0.07 1584 0.05 0.09 2240 approval 0.24

caring 0.19 0.05 0.08 721 confusion 0.35 0.08 0.13 999 0.08 0.13 1188 curiosity 0.43 0.24 desire 0.35 0.19 389 0.05 0.08 965 disappointment 0.27 0.24 0.05 0.09 disapproval 1558 0.20 disgust 0.39 0.14 582 0.35 0.08 0.12 316 embarrassment 0.24 0.10 excitement 0.06 586 fear 0.45 0.24 0.31 348 gratitude 0.79 0.73 0.76 1360 grief 0.17 0.03 0.04 78 0.38 0.20 0.26 897 joy 0.57 0.62 0.59 1014 love nervousness 0.20 0.06 0.09 156 0.85 neutral 0.41 0.55 11161 optimism 0.53 0.24 0.33 894 pride 0.33 0.05 0.09 128 realization 0.24 0.02 0.05 964 relief 0.33 0.03 0.06 162 remorse 0.45 0.46 0.45 303 sadness 0.46 0.18 0.25 727 surprise 0.40 0.21 0.27 665 0.42 34364 accuracy macro avg 0.36 0.21 0.24 34364 0.39 0.42 0.35 34364

weighted avg

Best Sentiment Score: 0.5154012619915243

Best Sentiment Estimator: DecisionTreeClassifier(max_depth=100, min_samples_split=30)

Sentiment Classification Report precision recall f1-score support

ambiguous 0.42 0.15 0.23 3816 negative 0.55 0.32 0.41 7677 neutral 0.43 0.75 0.55 11161 0.70 0.53 positive 0.61 11710

0.51 34364 accuracy macro avg 0.52 0.44 0.45 34364 weighted avg 0.55 0.51 0.50 34364

Best Emotion Score: 0.40468225933106056

Best Emotion Estimator: MLPClassifier(activation='identity', hidden layer sizes=(5, 10), max iter=2)

Emotion Classification Report:

precision recall f1-score support

admiration 0.43 0.45 0.44 2141 0.48 0.54 0.51 1178 amusement anger 0.30 0.10 0.15 1060 0.08 0.00 0.00 1584 annoyance approval 0.00 0.00 2240 0.00 0.00 0.00 721 caring 0.50 confusion 1.00 0.00 0.00 999 curiosity 0.83 0.00 0.01 1188 0.00 0.00 desire 0.00 389 disappointment 0.00 0.00 0.00 965 0.01 0.01 disapproval 0.35 1558 0.45 0.10 0.17 582 disgust embarrassment 0.00 0.00 0.00 316 0.00 excitement 0.00 0.00 586 0.00 fear 0.00 0.00 348 gratitude 0.82 0.74 0.78 1360 grief 0.00 0.00 0.00 78 0.09 joy 0.31 0.14 897 love 0.50 0.61 0.55 1014 0.00 0.00 0.00 nervousness 156 0.39 0.91 0.54 neutral 11161 0.31 0.38 optimism 0.49 894 0.00 0.00 0.00 128 pride realization 0.00 0.00 0.00 964 relief 0.00 0.00 0.00 162 remorse 0.00 0.00 0.00 303 0.22 0.20 0.21 727 sadness surprise 0.00 0.00 0.00 665 accuracy 0.41 34364 macro avg 0.25 0.15 0.14 34364

weighted avg 0.35 0.41 0.29 34364

Best Sentiment Score: 0.556308900174004

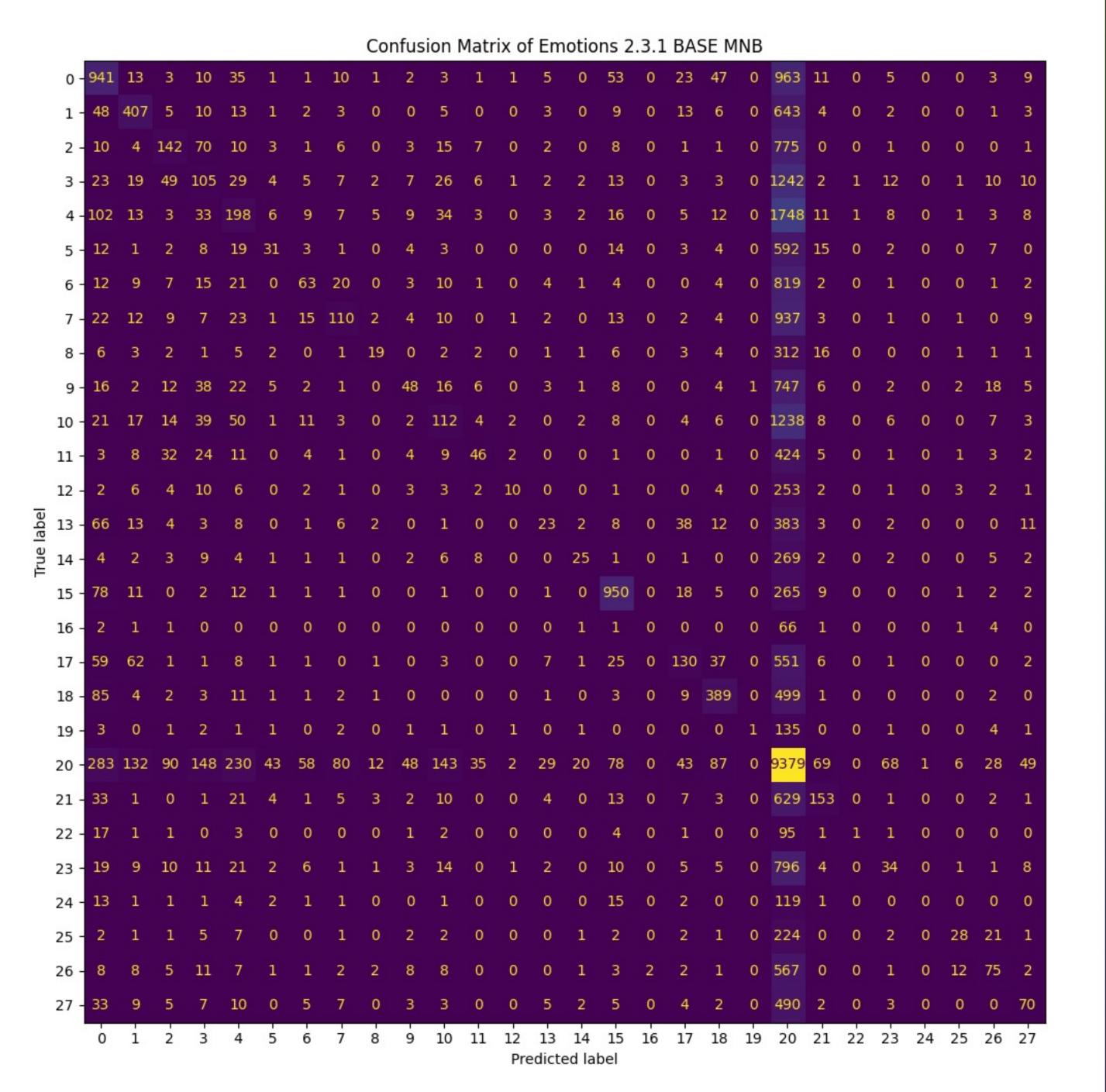
Best Sentiment Estimator: MLPClassifier(activation='identity', hidden_layer_sizes=(5, 5), max_iter=2)

Sentiment Classification Report

precision recall f1-score support

ambiguous 0.46 0.16 0.24 3816 negative 0.55 0.51 0.53 7677 neutral 0.48 0.61 0.54 11161 positive 0.68 0.67 0.67 11710

accuracy 0.56 34364 macro avg 0.54 0.49 0.49 34364 weighted avg 0.56 0.56 0.55 34364

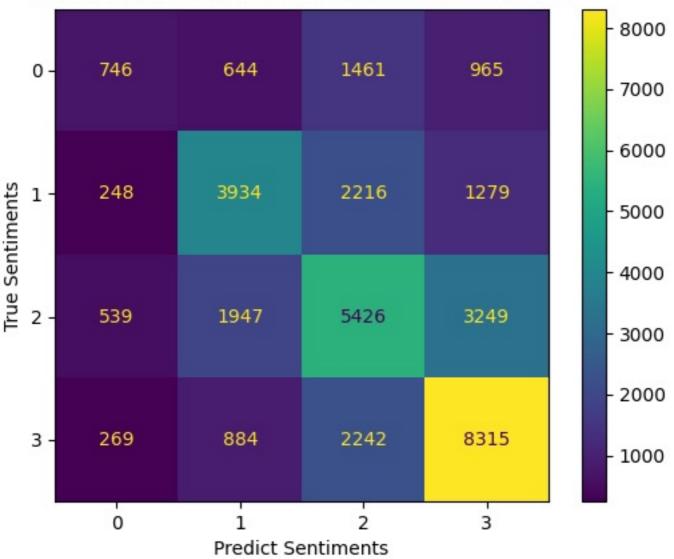


8000

- 6000

- 4000

Confusion Matrix of Sentiments 2.3.1 BASE MNB



									Co	nfu	sion	Mat	rix (of En	noti	ons 2	2.3.	2 BA	SE D	T								
0 -	1206	45	19	46	115	24	19	17	10	10	13	3	2	51	3	53	1	73	84	2	269	27	11	9	4	1	4	20
1 -	66	652	17	45	52	8	20	14	10	6	15	6	4	18	2	7	1	53	8	1	145	4	1	9	0	4	3	7
2 -	15	28	397	173	33	13	20	13	2	20	47	25	8	3	7	6	3	4	4	0	223	0	0	5	0	1	4	6
3 -	50	70	200	352	98	26	33	31	13	50	101	32	14	14	12	16	3	11	13	3	392	6	1	13	2	6	13	9
4 -	211	57	46	127	558	69	42	32	38	33	75	19	9	19	11	8	4	35	42	3	701	36	2	23	7	5	12	16
5 -	36	10	22	45	66	195	8	12	16	15	16	2	2	3	5	15	3	17	11	10	174	17	1	4	1	4	10	1
6 -	19	22	31	73	54	13	278	115	8	16	41	4	7	6	4	3	0	4	3	4	268	4	1	8	0	2	3	8
7 -	37	24	30	54	43	10	168	389	14	12	17	4	5	13	3	7	1	6	8	1	307	5	1	9	0	3	3	14
8 -	16	9	6	13	37	13	1	12	123	7	12	2	1	9	3	6	0	5	7	0	82	20	0	1	0	0	2	2
9 -	30	17	50	126	66	20	25	9	10	169	64	17	6	8	5	3	4	3	5	9	232	8	2	17	2	7	42	9
10 -	45	39	89	169	124	27	44	29	11	70	380	19	15	8	12	5	0	4	5	4	409	11	0	9	1	2	18	9
11 -	13	22	89	79	30	2	13	8	2	37	35	101	9	1	11	2	2	2	3	1	105	0	0	2	0	2	4	7
12 -	7	21	15	51	22	2	10	7	1	14	19	9	57	1	2	1	1	0	3	1	58	1	1	4	0	4	2	2
13 -	75	32	13	18	43	1	6	35	12	5	2	2	1	90	1	19	0	44	20	2	132	6	3	3	0	0	0	21
14 -	10	8	18	25	15	12	4	5	1	15	10	14	3	0	130	0	2	5	0	6	50	1	0	4	2	1	4	3
15 -	118	14	5	21				10	9	8	10	0	1	12	0	976	0	27	11	0	50	15	2	2	4	14	5	1
16 -	4	1	6	2	6	4	2	0	4	4	3	2	1	0	2	1	7	1	0	0	12	1	0	3	0	4	8	0
17 -	93	140	7	23	55	15	3	4	15	12	11	2	0	39	2	41	0	214	55	0	137	7	5	7	3	0	2	5
18 -	141	15	6	18	46	18	11	6	12	11	11	1	2	20	0	10	0	45	529	1	92	4	0	6	2	1	3	3
19 -	NAME OF TAXABLE PARTY.															0								1			9	0
allow-i	10000																							135				
																								6				4
																								1				
																								74			12	
90.00	18		4	9	21	9	4				4			2			0	7	2	2			3	5				0
25 -	1000	7	4		The same	11					11			2			3		2	3	40	3	0	9	0	88		1
	WEST TO																							6				
27 -		26	Company of the last			10000							-	-		6		10000	3	-	and the same		110/20	5	14.000	0	- 128	135
	0	1	2	3	4	5	6	7	8	9	10	11	12 Dr	13	14		16	17	18	19	20	21	22	23	24	25	26	27

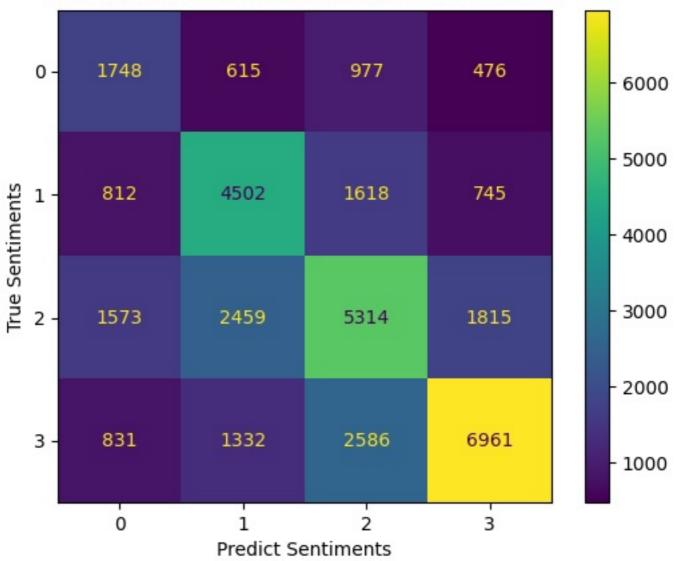
Predicted label

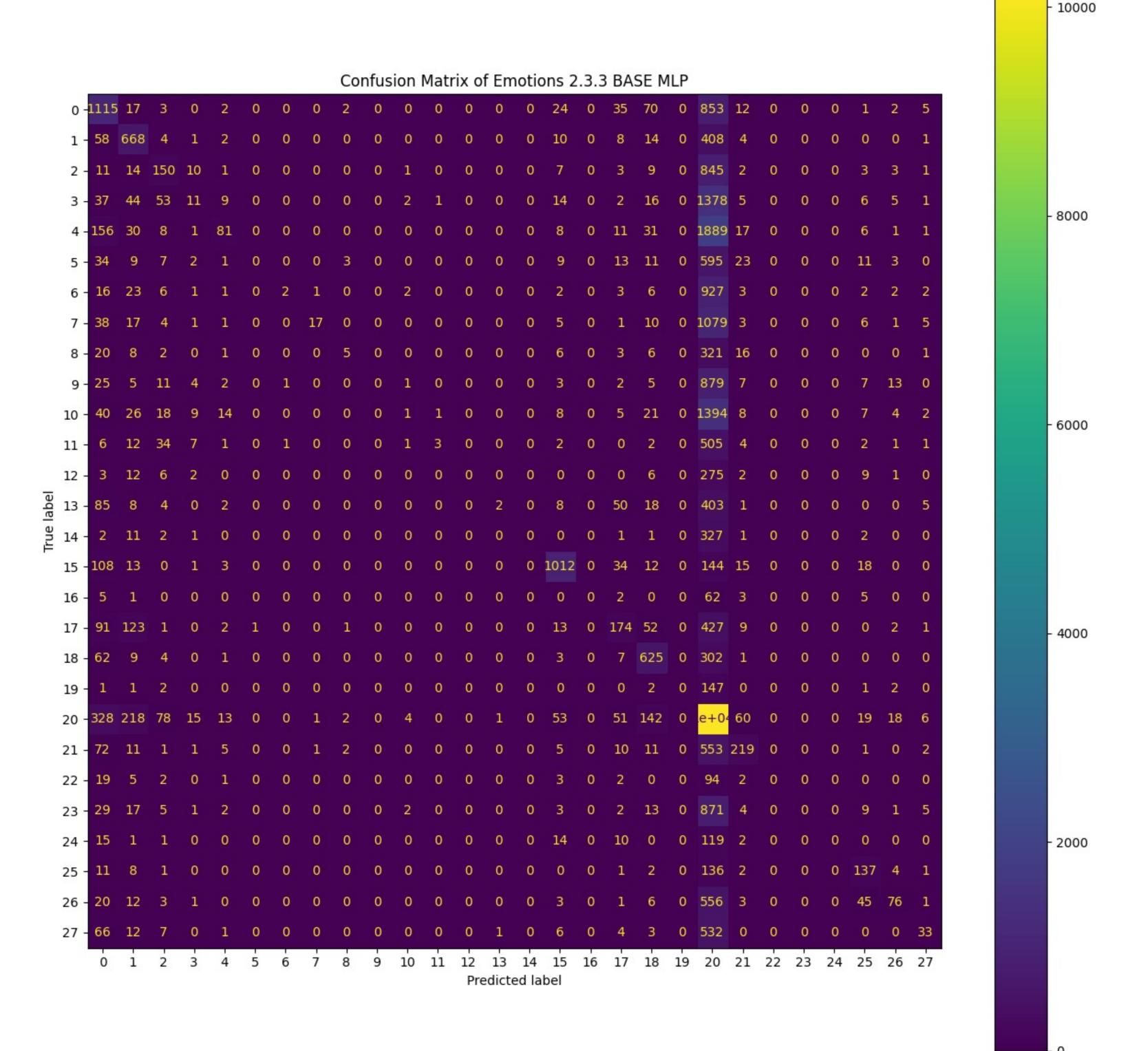
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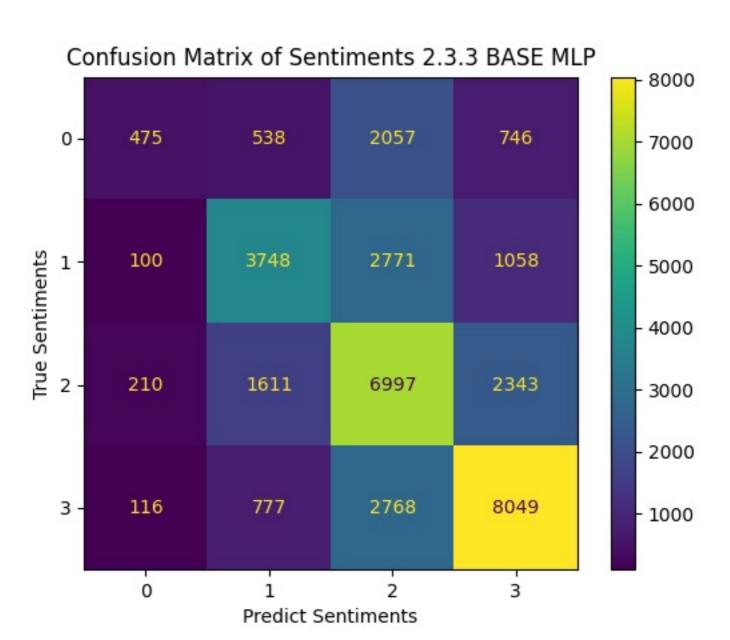
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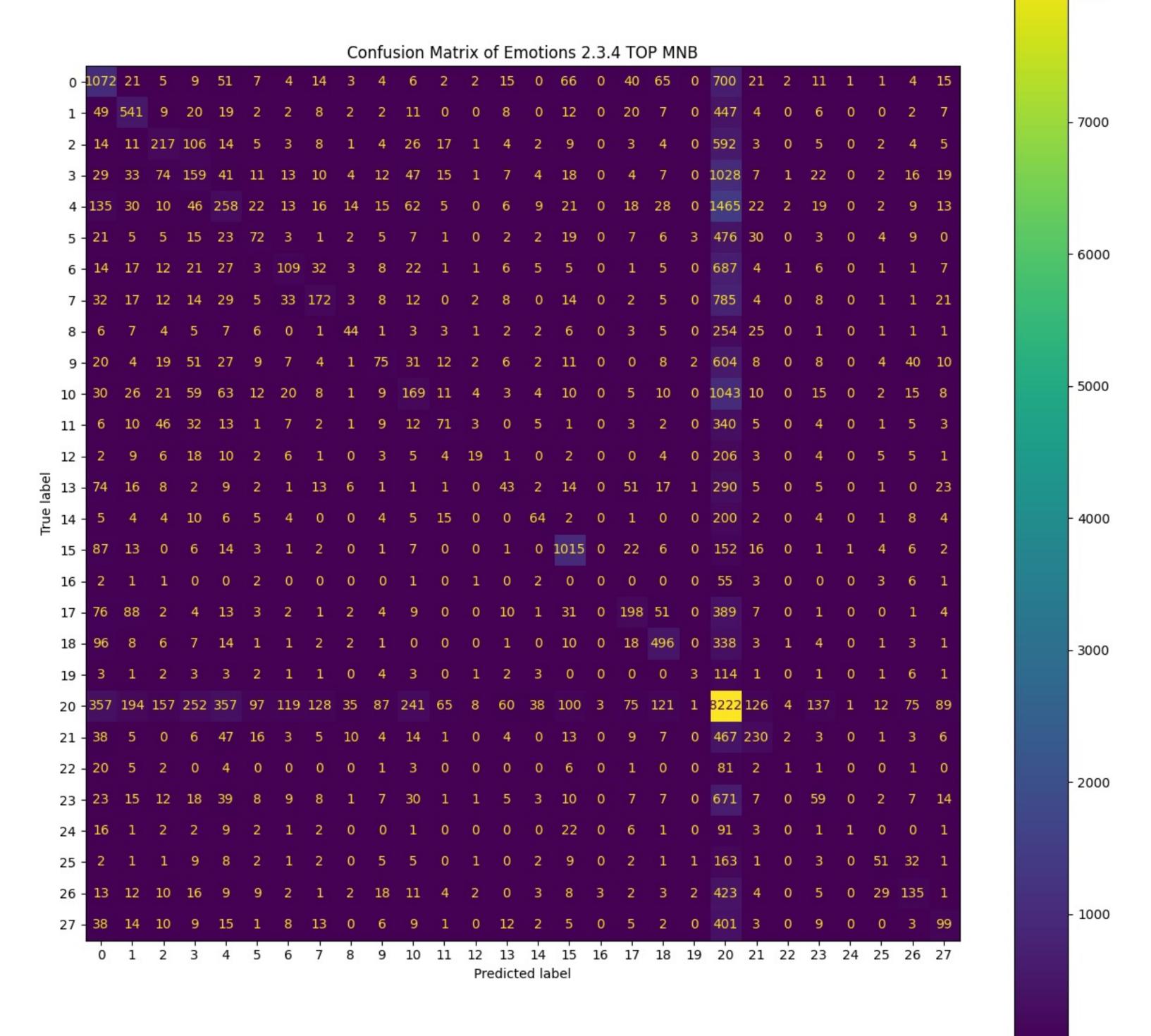
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Confusion Matrix of Sentiments 2.3.2 BASE DT

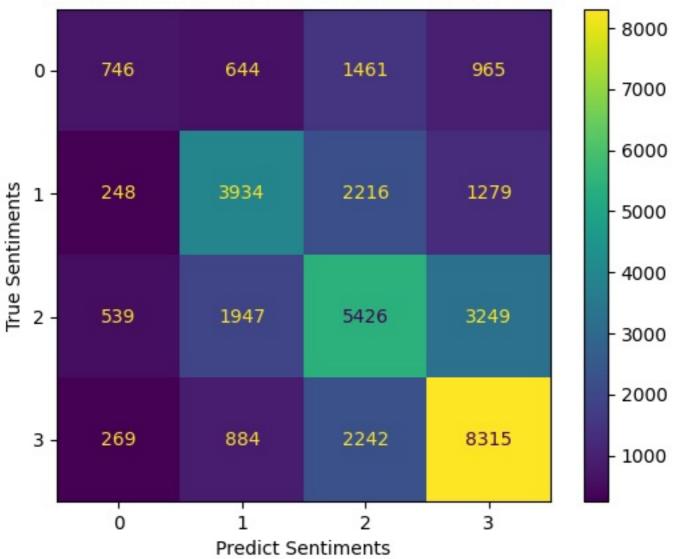


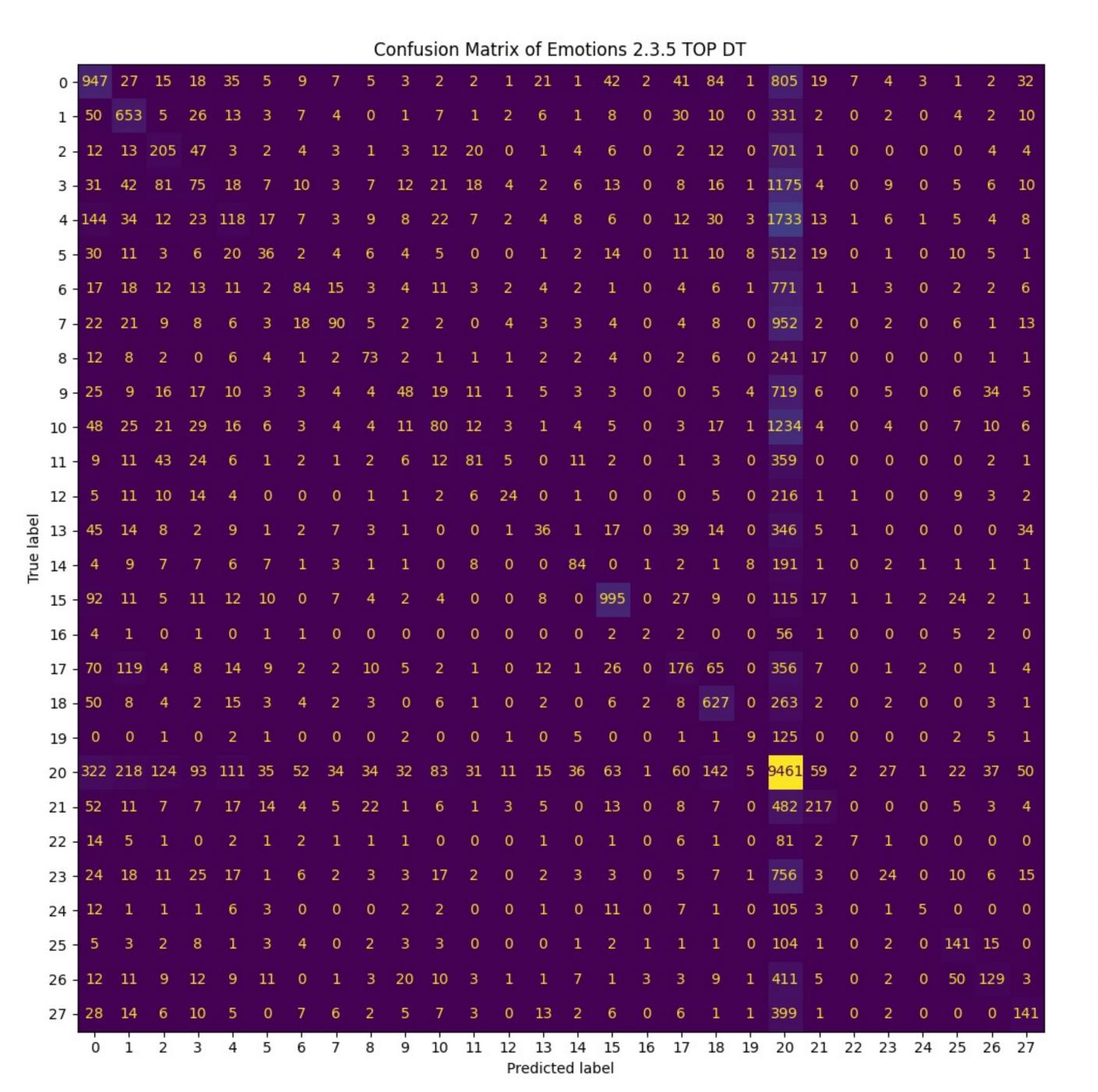






Confusion Matrix of Sentiments 2.3.4 TOP MNB



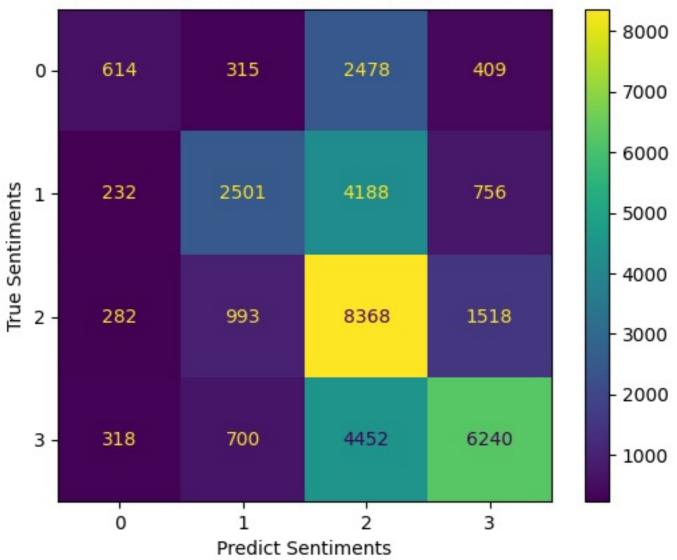


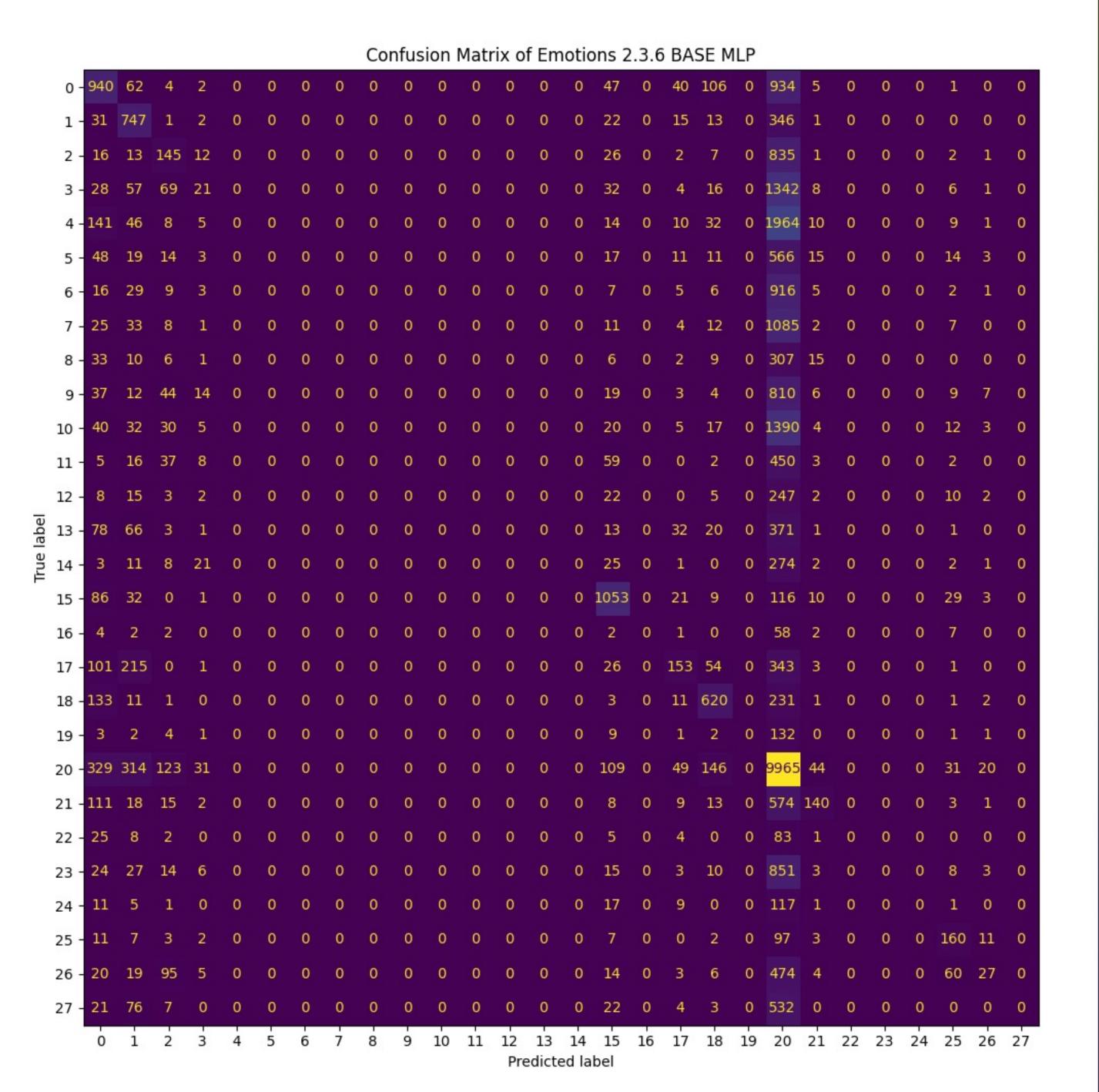
- 6000

- 8000

- 4000

Confusion Matrix of Sentiments 2.3.5 TOP DT





- 8000

- 6000

4000

Confusion Matrix of Sentiments 2.3.6 BASE MLP

